DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta, GA 30333

August 22, 2017

Mr. David McCumber
Editor, ***The Montana Standard***
25 W. Granite
Butte, MT 59701

Dear Mr. McCumber:

Thank you for your letter to the Agency for Toxic Substances and Disease Registry (ATSDR) regarding residents of Butte and Anaconda, Montana and their potential exposure to lead and arsenic. In your letter, you asked ATSDR to study both the current levels of lead and arsenic, and the incidence of multiple sclerosis and other autoimmune and neurodegenerative diseases in the Butte and Anaconda areas.

ATSDR reviewed the available information concerning both the Anaconda and Butte communities. Remediation of residential areas to remove lead and arsenic contaminated soil is ongoing at both sites. Priority is given to residences with young children. Health education targeting blood lead reduction is also ongoing in the Anaconda and Butte communities. At both areas, multiple blood lead and urine arsenic biomonitoring studies have been conducted or are ongoing. These biomonitoring studies are listed below.

- Blood lead and urine arsenic biomonitoring is being offered on a continuous basis in the Silver Bow Creek/ Butte Area National Priority List (NPL) site. The 2014 Silver Bow Creek/Butte Area NPL site biomonitoring study evaluated 3,000 blood lead records for children ages 1 through 5 years (2003-2010). The 2014 report of the blood lead biomonitoring results indicated blood lead levels in children had dropped dramatically during that time period (https://www.epa.gov/sites/production/files/2014-07/documents/bpsou-health-study-phase-1-report-jul-2-2014.pdf). Results from more recent testing indicate that blood lead levels continue to drop. For example, the percent of blood lead level results above 5 µg/dL decreased from 34 percent in 2003 to 10 percent in 2010. Remedial activities are on-going and will reduce the potential for exposure even more.

- A blood lead and urine arsenic biomonitoring study was conducted at the Anaconda Company Smelter NPL site in 2013. The 2013 Anaconda study conducted an intensive door-to-door recruiting effort and visited over 1,000 homes. Over 100 people volunteered for the 2013 biomonitoring study. None of the children that participated in the study

had blood lead levels above 5 micrograms per deciliter (µg/dL).[1] The geometric mean blood lead level of the child participants was 0.8 µg/dL. The geometric mean total and speciated arsenic for all participants was below the study reference level of 30 micrograms per liter (µg/L) (13.3 µg/L and 10.3 µg/L, respectively). Urine arsenic levels for children in this study were lower than the adult results. One child and two adults were found to have urine arsenic levels above 30 µg/L. Subsequent retesting of those specific participants with urine arsenic levels above 30 µg/L yielded lower results. Because the biomonitoring data documented that Anaconda children blood lead levels were below 5 µg/dL and urine arsenic levels were below the study reference levels, biomonitoring was discontinued for both lead and arsenic in the Anaconda area after 2013. Since then, remedial activities have even further reduced the potential for exposures to site-related contaminants.

- A state-wide blood lead study of Medicaid enrolled children was completed by the State of Montana in 2012. A total of 572 Anaconda/Deer Lodge County children participated in the study. Two children (0.35% of study population) had blood lead levels above 5 µg/dL with 81% below the detection limit of 1 µg/dL.

Your second question requests a prevalence study on multiple sclerosis (MS) and other autoimmune and neurodegenerative disease in the area. There is no known cause of MS. The current scientific information indicates that there may be a combination of genetic and unknown environmental factors (possibly linked to exposure to Epstein-Barr virus or other viruses and possibly linked to less sun exposure (low vitamin D hypothesis)). Neither lead nor arsenic have been demonstrated to be a cause of MS. Given the short half-life of arsenic in the body (2-3 days), urinary arsenic monitoring only reflects recent exposure and would not be a useful measure of long-term dose that would be needed to ascertain any association between neurodegeneration and arsenic exposure.

It is difficult to know whether or not there is an increase in prevalence of MS, autoimmune, or neurodegenerative diseases in Butte or Anaconda compared with the rest of Montana because there are no state wide or national registries to compare data to.[2] Without background state or national rate data for comparison, cluster investigations are challenging and have limited ability to address community concerns on disease relationships.

HHS and ATSDR appreciate your interest in this important public health issue. However, based on the information from current and recent biomonitoring activities described above, ATSDR does not plan to conduct additional biomonitoring in Butte and Anaconda at this time. In addition, due in large part to the lack of a link between MS and arsenic and lead as well as the

1 The reference level is based on the highest 2.5% of the U.S. population of children ages 1-5 years. That level is currently 5 µg/dL and based on the 2009-2010 National Health and Nutrition Examination Survey (NHANES).
2 ATSDR maintains the National Amyotrophic Lateral Sclerosis (ALS) Registry (http://wwwn.cdc.gov/als/). The registry is designed to collect information about ALS, a neurodegenerative disease, so more can be learned about the disease. The registry does not allow for determination of the number of cases in a given area because the registration is not mandatory so it is not considered complete.

lack of incidence and prevalence data for MS, ATSDR does not plan to conduct a health study concerning MS in Butte and Anaconda.

As the federal agency responsible for evaluating the public health implications of hazardous substances in the environment, ATSDR will continue to work with our colleagues at the Montana Department of Public Health and Human Services, the Anaconda-Deer Lodge County Health Department, the Butte-Silver Bow Health Department, and the U.S. Environmental Protection Agency to prevent hazardous metal exposures in Montana. In addition, ATSDR regional staff would be happy to meet with you in person the next time they are in Montana. Thank you, again, for your letter. We hope this information has been helpful.

Sincerely,

Patrick N. Breysse, Ph.D., C.I.H.
Director, National Center for Environmental Health and ATSDR
Centers for Disease Control and Prevention